

THE BOARD OF EDUCATION FOR THE BOROUGH OF SCARBOROUGH

CONTROL MODIFICATIONS BY

APS

SCHOOL	UTILITY	ANNUAL REDUCTION	1979 UTILITY COST	UTILITY SAVINGS **	\$	IMPROVEMENT COST	PAYBACK YR.
MILITARY TRAIL JR. PS	GAS	31.1%	9,863	2315	4,073	4,072	1
	ELECTRIC	20.9%	11,217	1758			
JACK MINER PS	GAS	20.4%	14,338	2194	4204	3,287	0.8
	ELECTRIC	17.8%	15,059	2010			
ALEXMUIR JR. PS	GAS	29.5%	7,308	1617	3515	2,699	0.8
	ELECTRIC	24.6%	10,285	1898			
SILVER SPRINGS PS	GAS	37.8%	6,425	1822	3,973	1943	0.5
	ELECTRIC	36.6%	7,835	2151			
WENDELL STATTON SR. PS	GAS	57.6%	10,221	4415	10,114	5300	0.5
	OIL	19.5%	16,463	3210			
	ELECTRIC	22.6%	14,684	2489			
TIMBERBANK PS	GAS	17.1%	8,142	1044	2,784	2110	0.8
	ELECTRIC	22.1%	10,499	1740			
WEST HILL C.I.	OIL	8.1%*	46,552	3771	24,419	36,370	1.5
	ELECTRIC	10.9%*	51,974	4249			
	GAS	51.8%*	42,211	16,399			
				TOTALS	53,082	55,781	1.05

- * - PART YEAR ONLY

- ** - GAS AND ELECTRIC @ 75% OIL @ 100%

JRM/sc June 18, 1981

LETTER FROM SCARBOROUGH BOARD ACCOMPANYING CHART ABOVE

Gentlemen:

During early 1979 control improvements were carried out by your firm on a number of our schools. These schools are listed on the attached schedule which indicates the savings that have been achieved.

For clarification purposes, it should be noted that:

- a) no allowance has been made for the fact it was 4.7% colder in 1980 than in 1979.
- b) The utility costs are 1979 actuals and no allowance has been made for escalation.
- c) The majority of the savings are undoubtedly higher as the modifications were not in effect for the entire year.
- d) We have assumed only 75% of the actual gas and electricity savings because of the sliding scale rate structures.
- e) Approximately \$17,000. Is included in the cost of improvements at West Hill Collegiate for other work that was performed at the time aimed primarily at improving poor environmental conditions.

It is almost needless to say that we are very pleased with the results and the manner in which they were carried out.

Yours very truly
J.R. Mazanik

NOTE: Actual Board information copied into Word.

THE DURHAM BOARD OF EDUCATION

CONTROL MODIFICATIONS BY

APS

ENERGY USE
YEAR PRIOR TO
CHANGE

ENERGY USE
YEAR FOLLOWING
CHANGE

ENERGY
SAVINGS

ECONOMIC
BENEFIT

SCHOOL	ELECTRIC	FUEL	ELECTRIC	FUEL	ELECTRIC	FUEL	SAVINGS
ADMIN.	575,040	767,690	469,120	597,192	105,920	170,498	\$4,641.00
GENERAL VANIER	1,847,200	4,584,768	1,520,720	4,127,945	326,480	456,823	\$13,480.00
HENRY ST. HS *	1,049,9162	2,772,563	961,263	2,671,423	88,653	101,138	\$3,385.00
O'NEILL CVI	949,025	2,294,845	886,925	2,236,678	62,100	58,167	\$2,219.00
DUNBARTON HS	1,686,500	3,376,841	1,586,086	3,001,606	100,414	375,235	\$6,962.00
G.L. ROBERTS HS	1,129,996	2,433,187	1,001,192	1,338,622	128,804	896,565	\$13,914.00
SOUTHWOOD PARK PS	820,080	NO FUEL	554,640	NO FUEL	265,440	NO FUEL	\$6,503.00

TOTAL SAVINGS	\$51,104.00
TOTAL COST	\$42,340.00
PAYBACK	8 MONTHS, 1 WEEK

- * - CHANGES WERE IN EFFECT FOR 3 MONTHS.
- ALL CONSUMPTION VALUES ARE IN KILOWATT-HOURS.
- DOLLAR VALUES ARE 1981 FUEL COSTS

DM: mm
1982 01 14

Notes:

- Actual chart of School Board's data copied into Word.
- Administration and Henry St. are multizone systems.
- Southwood Park PS is electric baseboard and electric reheat.
- General Vanier SS, O'Neill CVI and Dunbarton have a variety of HVAC fan systems, but no multizones.
- G.L. Roberts HS was VAV with perimeter heating only controlled via indoor/outdoor reset from one main valve.

**ACTUAL GAS CONSUMPTION AMOUNTS FOR
THE ETOBICOKE EDUCATION CENTRE
ILLUSTRATING THE IMPACT OF EVAPORATIVE COOLING AND
LOAD ANALYZING TECHNIQUES**

READING DATE

GAS CONSUMPTION (X 100)

AUG. 29/75	1,324.8
SEPT. 30/75	2,069.8
OCT. 30/75	1,965.1
DEC. 01/75	1,776.8
DEC. 30/75	1,930.1
JAN. 30/76	2,806.9
FEB. 27/76	2,308.1
MAR. 30/76	2,624.8
APRIL 29/76	1,749.6
MAY 28/76	1,676.1
JUNE 29/76	1,053.2
JULY 28/76	924.6
↓	
JAN. 26/77	9,168.4
FEB. 21/77	1,276.8
MAR. 22/77	1,192.7
APRIL 21/77	613.6
MAY 20/77	522.5
JUNE 21/77	609.2
JULY 21/77	683.7
AUG. 22/77	1,066.6
SEPT. 22/77	1,156.2
OCT. 21/77	1,328.5
NOV. 22/77	1,224.2
DEC. 21/77	815.1
JAN. 20/78	927.5
FEB. 20/78	1,078.8
MAR. 22/78	920.5
APRIL 21/78	771.2
MAY 19/78	526.8

WHEN COMPARING THE GAS CONSUMPTION FOR THESE TWO SETS OF MONTHS, ONE FINDS JUNE AND JULY REQUIRED 13.5% MORE GAS Before THE CHANGES, THAN DECEMBER AND JANUARY REQUIRED AFTER THE CHANGES.

52.6% REDUCTION WITH EVAPORATIVE COOLING TECHNIQUE.

60% REDUCTION WITH ALTERNATE TECHNIQUE.

INITIAL CONSERVATION DESIGN EMPLOYING EVAPORATIVE COOLING EFFECT OF THE HUMIDITY WATER SPRAYS. OTHER TECHNIQUES WERE IMPLEMENTED SIMULTANEOUSLY.

THE WATER SPRAYS WERE REPLACED WITH STEAM HUMIDIFIERS CAUSING THE COOLING EFFECT TO BE LOST.

AN ALTERNATE CONSERVATION CONTROL TECHNIQUE WAS DESIGNED AND INSTALLED. LOAD ANALYSING FROM THE WARMEST SAMPLE THERMOSTAT RE-ESTABLISHED THE CONSUMPTION REDUCTION.



January 8th, 2003

To Whom It May Concern:

Re: Analysts of Pneumatic Services- Energy Saving Initiatives

Since its inception over 40 years ago Wycliffe Property Management Limited has grown to the point where we manage over two million square feet of commercial and industrial property in the Greater Toronto Area for various owners. As part of our portfolio, for the last eight (8) years we have acted as property manager of The Shops on Steeles and 404, a 280,000 square foot Shopping Centre located in Thornhill, Ontario.

Approximately 6 years ago upon a recommendation received from Carrier Canada we met with Dave Strain, owner of Analysts of Pneumatic Services (A.P.S.) to evaluate the Shopping Centre's H.V.A.C system with the goal of completely automating the control pneumatics to bring in "free" outside air when temperatures fell below 10C.

After upgrading the pneumatic system and installing safety features to prevent freezing of coils etc., we were able to annually shut down our 347 ton centrifugal chiller for 5 1/2 months, relying solely on the "free" air provided, this resulted in a direct energy saving of over 30%.

In another matter, A.P.S. found the perimeter electric baseboard heaters were being used indiscriminately by the Tenants while the cooling system was functioning. In light of this, A.P.S. developed a morning "warm up" process which was initiated by using excess heat from our boilers to supply warm air through V.A.V boxes in each Tenant space. The electric baseboard heaters were then put under mall control, only activating if temperatures dropped below a set point. This additional energy saving initiative helped to bring our consumption cost savings down another 10% from previous usage.

The quality of air has actually improved with these innovations. Dave Strain's professional expertise has benefited The Shops on Steeles and 404 tremendously over the years and we have found him completely dedicated in his ongoing quest for helping the environment through saving energy.

Yours truly,
WYCLIFFE PROPERTY MANAGEMENT LIMITED


Grant Brunne
Operations Manager


Mark Murphy
Property Manager

Head Office
1485 Whitehorse Road
Downsview, Ontario M3J 2Z2
Telephone (416) 635-2910
Fax (416) 635-7869

Branch Office
2900 Steeles Ave, East Ste 204
Thornhill, Ontario L3T 4X1
Telephone (905) 881-7422
Fax (905) 881-1224